

# Extreme datasets put the “big” in Big Data Analytics



In many industries, there are applications and use cases that produce and analyze huge datasets.

Consider the energy sector where monitoring usage and load balancing across the grid is a constant matching of inputs and outputs. Think of the public sector where anything from traffic congestion to national defense is managed through analyzing enormous amounts of data and acting on that data. Healthcare, for example, has seen an influx of collection in remote patient data, where the demands of managing and analyzing large datasets can task any system.

## Challenge: Managing data and the applications that use it

These data-intensive applications often have many moving parts. The Internet of Things (IoT) might be deployed for data acquisition. This increases the number of endpoints to secure and manage.

The cloud is generally used for analytics or data management. A high-bandwidth network ties it all together.

However, with extreme datasets, moving the data back and forth to the cloud introduces potentially huge costs.

Latency also becomes a factor if cloud-based applications – in a data center hundreds or even thousands of miles away – are the only way for distributed users to interact with this mountain of data.

## Industry-Specific Use Cases

- **Healthcare:** Influx in data collected from remote patient monitoring devices, ultimately centralized to one area to make data-driven decisions pre or post treatment
- **Public Sector:** Early warning system sensor network requires low-latency data acquisition and processing for alerting and notifications
- **Energy:** Speed up analytics and increase data security across your multiple sites for real-time decision making

## Solution: Build the data base camp, add proactive security at the edge

Using edge computing resources, organizations can build a data “base camp” in the network to become more effective. This keeps important data near those who need fast access to it. This “base camp” can store valuable data that is created from local digital interactions and gives organizations the opportunity to improve data quality and governance.

Lumen® Storage solutions for the edge with Lumen® Network Storage and Layer-2 Ethernet connectivity enhanced by Data Access Accelerator and Layer-3 IP-VPN provides enterprise grade storage for any program that produces a lot of data. This base camp is quite effective for those cases where data is not being consistently produced such as energy generation and consumption.

Driven by the need to maintain consistent, predictable performance within an optimal cost structure, Lumen Storage solutions become an extension of the organization’s assets. Once data is stored in the network, it can be leveraged in numerous ways to create further value, all while reducing the storage footprint within customer facilities. This edge computing capability can also apply processing of raw data so that only the most important data is passed along to cloud engines for further analysis, lowering the cost of data transmission.

With edge computing, applications that use these massive datasets can move closer to the edge where that data is acted upon in the real world. This cuts latency that results from attempting to control functions from a cloud data center that might be hundreds or thousands of miles away.

Securing application experiences running at the edge and protecting that data require intuitive and intelligent security built-in to the network. With Lumen robust Web Application Firewalls (WAF), Bot Management and API Protection service – as well as one of the largest DDoS deployments in the world – the Lumen vision for security at the edge is that it’s seamless, built-in, automated and informed by high-fidelity threat intelligence to help protect and accelerate application experiences for its customers and their end users.

## Results: Security and data flexibility

These architectures composed of Lumen Intelligent Solutions components, expertise and managed services can modernize networks and secure workloads at the edge. Consider just a few effects of this edge computing infrastructure for large datasets:

- Reduced latency for application and security response
- Security at the edge for sensitive data
- Lower network costs from transporting only relevant data to the cloud
- Fast access to time-sensitive research data

Edge computing complements both cloud computing and the IoT, creating a seamless, low latency remote security solution.

Edge computing approaches put data processing and storage closer to the network edge —where people, processes and items in motion reside.

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